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**DIGITAL BUSINESS STRATEGY – THE TYPICAL CASE OF A GERMAN
MANUFACTURING SME**

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Abstract

It is the existence of a digital strategy that has shown to be significant in determining whether or not *digitalization* is successful in a commercial context. Taking into account several literature findings, the construct of digital strategy in relation to contextual factors is identified as crucial. It is apparent that well-established, traditional organizations tend to struggle with *digitalization*. Identified theory was taken into account and investigated during an exploratory single case study at a traditional German manufacturing company. This thesis paper identifies several factors that impact on how well organizations manage *digitalization*. First, companies do not fully understand what *digitalization* means and secondly, the digital strategy development process is often unstructured and lacking clarity. Moreover, traditional companies are hindered in achieving their digital potential by their hierarchical structure and organizational culture. In order to support companies in the development of a digital strategy a guiding framework was developed.

Key Words

digitalization, digital strategy, traditional organizations, digital strategy development

To Marlene, my best friend
for always helping me when I'm going crazy

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1. Introduction

“Today, strategy without digital is like digital without strategy: deadly” (Haanaes, 2015; cited in Gerbert, Gauger, & Steinhäuser, 2015).

Digitalization is the new buzzword of the 21st century managerial era. Scholars and business magazines are effusive in their obsession. The term *digitalization* pops up relentlessly, making headlines in business journals and emerging as a priority topic on the agendas of most CEOs. The question about the place of a traditional company in this new world raises not only interest, but also concern (Brown, Sikes, & Willmott, 2012; Hess, Benlian, Matt, & Wiesböck, 2016; Kane, Palmer, Philips Nguyen, Kiron, & Buckley, 2015; Vermeulen, 2017).

The headlines that report on companies or even whole industries that have been disrupted virtually overnight by new trends and novel ways of doing business all relate back to one thing: digital innovation (Dawson, Hirt, & Scanlan, 2016; Hirt & Willmott, 2014; Kane et al., 2015; Peppard & Ward, 2016; Vermeulen, 2017; G Westerman, Calmédjane, Bonnet, Ferraris, & McAfee, 2011). According to researchers, “companies today are rushing headlong to become more digital” (Doerner & Edelman, 2015, p. 1). Though, as Kane et al. (2015) found in their study in cooperation with MIT Sloan, simply becoming digital will not result in any long-term value. A significant amount of the available literature on the topic places emphasis on a sound digital strategy as an essential success factor for any *digitalization* attempt (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013; D’Cruz, Timbrell, & Watson, 2015). However, companies seem to struggle with developing a digital strategy (Catlin, Scanlan, & Willmott, 2015; Gerbert, Gauger, & Steinhäuser, 2015; Peppard & Ward, 2016; Rogers, 2016). In particular, traditional small and medium sized companies report most problems and the lowest number of success stories (Kane et al., 2015; G Westerman et al., 2011). However, why this happens is not yet clear.

The concept of digital strategy in literature is still fragmented and thus, does not

provide a coherent picture of the concept and its implications (Bharadwaj et al., 2013; Hess et al., 2016; Peppard & Ward, 2016). Whereas many scholars do promote the importance of a digital strategy and emphasize its relationship to *digitalization* success, only a few actually provide a description of the underlying concept (Bharadwaj et al., 2013; Catlin et al., 2015; D'Cruz et al., 2015; Doerner & Edelman, 2015; Hess et al., 2016; McDonald, 2012; Willmott, 2014). Furthermore, academia up to this date has provided limited practical insight into how to successfully design a digital strategy, still lacking fundamentally helpful advice and approaches for organizations which would assist them to implement and manage *digitalization* (Bharadwaj et al., 2013; Catlin et al., 2015; D'Cruz et al., 2015; Hess et al., 2016; Singh & Hess, 2017; Vermeulen, 2017).

This thesis will try to synthesize different streams of research on digital strategy in order to clarify the concept. Secondly, this paper attempts to narrow the gap between theory and practice by combining literature findings with an ongoing *digitalization* endeavor. Thus, the issue of how traditional companies struggle with the development of a digital strategy is addressed, including the specific factors that have a negative impact on successful outcomes. This thesis is divided into two main parts: I will firstly undertake an intensive literature review to clarify the concept of digital strategy for *digitalization*. The second part focuses on the *digitalization* endeavor of a traditional medium sized manufacturing company as an exploratory single case study. For this purpose, semi-structured interviews were employed as an empirical method. To conclude, results will be compared to respective literature findings in order to provide new insights into the underlying reasons why companies struggle to define a coherent and powerful digital strategy.

2. Theoretical Background

Some executives are certain that digital is an entirely new way of doing business; others believe it is solely about technology (Catlin et al., 2015; Doerner & Edelman, 2015). Another

group of managers is certain that digital means technologically enabled process excellence whereas, for other company representatives, digital means a novel way of customer engagement (Catlin et al., 2015; Doerner & Edelman, 2015; Kane et al., 2015). None of these perceptions is essentially wrong. However, a lack of common vernacular and alignment regarding the direction of a business often results in fragmentary or erroneous efforts that lead to missed opportunities, bad performance, or deceitful starts (Babar & Yu, 2015; Catlin et al., 2015; Doerner & Edelman, 2015). For this reason it is important to establish an understanding of what digital actually is (Catlin et al., 2015; Doerner & Edelman, 2015; Rauscher, 2016). Therefore, I will begin by looking at digital technologies – the underlying enabler.

2.1 Digital Technologies

Contemporary scholars and many practice organizations agree that digital technologies must be considered as one of the greatest and most powerful disruptive forces for all organizations these days (Brown et al., 2012; Feser, 2016; Lamoureux, 2017; Shepherd, 2004).

Peppard and Ward (2016) assume digital technologies to be a combination of both information technology (IT) and information systems (IS). IT refers to the technology itself; that is, hardware (e.g. computers, sensors, phones, tablets) software (e.g. data management, operating systems, enterprise applications) and telecommunication networks. IS is understood as the means by which people or organizations utilize technology “through gathering, processing, collection and disseminating the information” that is provided (Peppard & Ward, 2016, p. n.a). Digital technologies have changed over the last 60 years (Lamoureux, 2017).

During the period from approximately 1954 to 2000 digital technologies referred to mainframe, computers and programming language (Appendix B1). Their focal point and objective for businesses was mainly efficiency (Lamoureux, 2017). The second digital era (~2000-2015) is best described by the acronym “SMAC” (Lamoureux, 2017) (Appendix B1). This abbreviation refers to the four groups of digital technologies that characterize this period:

social, mobile, analytics and embedded devices such as e.g. cloud services (Lamoureux, 2017; G Westerman et al., 2011). These technologies aided people to connect with one another (e.g. Facebook), search the internet (e.g. Google) or make it easier to acquire things (e.g. Ebay) (Lamoureux, 2017). Their impact is not only through increased efficiency; they also have the power to improve the effectiveness of products and services, even giving companies a competitive edge (Peppard & Ward, 2016). The third digital era (~2015- date) has just begun and is characterized by five groups of digital technologies: the internet of things, machine learning, robotics, artificial intelligence and natural language processing (Lamoureux, 2017) (Appendix B1). These technologies can “monitor, listen, learn, see and move“ (Lamoureux, 2017, p. n.a). Lamoureux (2017) stresses that effective utilization of these technologies will give companies the power to restructure whole industries.

Nonetheless, it is not technologies themselves that disrupt and transform industries, but their application by human beings, who understand their perils and can integrate them advantageously into the way business is undertaken (Dawson et al., 2016; Khare, Stewart, & Schatz, 2016). Digital technologies by nature are available to everyone or related with relatively small cost, and thus, initiatives based solely on the benefits of a technology will be easily replicable (Carr, 2003). For a company to create differential value it needs to link its existing assets with digital technologies. This integration is transformative and the basis of *digitalization* (Khare et al., 2016; Lamoureux, 2017; Peppard & Ward, 2016).

2.2 Definition *Digitalization*

Going digital is often described in literature as *digitizing*, which is the process of changing from analog to digital form (GartnerInc., 2017). Making a business process digital means using computer and internet technology to undertake that process. For example, when one orders from Amazon, the process is entirely digital. Corresponding, a digital product is simply one that is totally based on digital technology, such as Google search engine (Lamoureux, 2017).

Digitalization is defined as “the use of *digital technologies* to change a business model and/or provide new revenue and/ or value-producing opportunities; it is the process of moving to a digital business”(GartnerInc., 2017). The use of social media to drive brand awareness is a good example. Doerner & Edelmann (2015) agree, stating that *digitalization*¹ is about reexamining the entire business in the light of digital opportunities thereby identifying new frontiers where value can be created. As a second step, it is about leveraging those opportunities (Feser, 2016; Iansiti & Lakhani, 2014). Those opportunities can either be to (a) build capabilities to improve customer experiences, (b) enhance operational processes (c) steer digital products and services or (d) be the driver for new business models (Westerman et al., 2011; Kane et al., 2015) (Figure1). Hence, *digitalization* goals can focus on either enhancement, exploration or transformation. This can be achieved through reengineering the value chain or reimagining a firm’s offering (Gerbert et al., 2015). Whereas enhancement in most cases results in moderate development, transformation is usually perceived as a driver for significant growth and achievement of sustainable competitive advantage. However, the first involves considerably less risk than the latter (Gerbert et al., 2015; Kane et al., 2015; Westerman et al., 2011).



Figure 1 *Digitalization* Opportunities (aligned on Gerbert et.al, 2015)

By this means, it is emphasized that *digitalization* is to be more seen as a proactive approach

¹ Most scholars use the terms *digitalization* and *digital transformation* interchangeably, as they believe that it is transformation and the associated maximum value that is ultimately perused by every organization (GartnerInc, 2017).

on how to do things rather than as a thing itself (Doerner & Edelman, 2015; Lamoureux, 2017). Peppard & Ward (2016) moreover emphasize that *digitalization* should not be understood as a disruption scenario only: It is not simply “displacement and replacement” but more the notion of “connectivity and recombination”.

2.3 Reasons for Going Digital

Thinking digital is inevitable for organizations nowadays in order to not fall short (Hirt & Willmott, 2014). Digital drives new possibilities and it is up to organizations whether or not these are perceived as threats or opportunities. 76% of all respondents from a survey of MIT Sloan state that digital technologies are important to their organization, or will be within the next three years (Kane et al., 2015), showing that companies are already aware of the importance of becoming more digital. Capgemini in cooperation with MIT Sloan specify in their study that there are (a) **external** as well as (b) **internal** forces that pressure companies to transform digitally (Westerman et al., 2011).

The same study has found that the main **external reasons** for *digitalization* are: (1) competitor and industry pressure (72%). This is due to the decrease in costs for high-end IT, which pushes more companies to engage in digital solutions (Iansiti & Lakhani, 2014). “Digitization often lowers entry barriers, causing long-established boundaries between sectors to tumble. At the same time, the “plug and play” nature of digital assets causes value chains to disaggregate, creating openings for focused, fast-moving competitors. New market entrants often scale up rapidly at lower cost than legacy players can, and returns may grow rapidly as more customers join the network” (Hirt & Willmott, 2014, p. 2). The ability to test and try, connect and partner, enables competitors to emerge from all sorts of places, altering the competitive landscape in unexpected ways (Hirt & Willmott, 2014; Willmott, 2014).

(2) Growing customer expectations (70%) accounts for the second **external reason** that creates pressure on companies to transform more digitally (Westerman et al., 2011).

Edelman & Heller (2015) stress that it is the way organizations interact and connect that is to be transformed. Customers now more than ever expect personalized treatment (Abraham et al., 2017; Berridge, 2016). It is inevitable for organizations these days to act in more customer-centric ways: to track, analyze and interpret their customers' attitudes and behaviors becomes an imperative (Babar & Yu, 2015; Berridge, 2016; Bonnet et al., 2015; Edelman & Heller, 2015). Digital capabilities and solutions enable organizations to do so. Bonnet et al. (2015) report that digitally mature companies on average earn 50% higher customer satisfaction scores in comparison to their less digitally mature peers. Furthermore, Westerman et al. (2012) point out that most customers these days are tech-savvy and expect the same from the brands they identify and shop for.

Internal reasons that drive organizations to transform digitally are employees' expectations, which scored 32% in MIT's survey (Westerman et al., 2011). Employees own better digital solutions at home than most organizations do and hence, expect similar tools and standards at work (Westerman et al., 2012). On top of that, Kane et al. (2015) have shown in their study that on average 80% of employees want to work for digital leaders, grow digital capabilities and perceive *digitalization* positively; as something, they want to be part of.

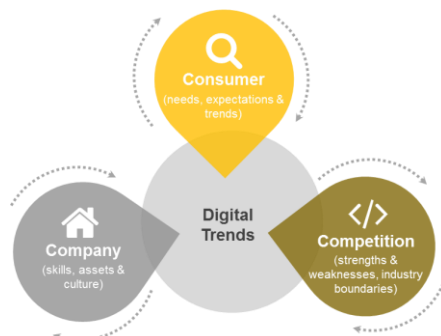


Figure 2: Digital Impact on Ohmae's 3C Framework (own conception)

Ultimately, it can be seen from research undertaken that digital technologies influence all three core aspects of Ohmae's business framework that investigates the mind of a strategist (Iansiti & Lakhani, 2014; Ohmae, 2003) and all three aspects themselves influence the development of new digital technologies (Figure 2). Hence, we presume that digital itself must be of strategic relevance (Dahlström, Desmet, & Singer, 2015; Iansiti & Lakhani, 2014; Reeves,

Haanaes, & Sinha, 2015). The onus is on companies to analyze and understand where value can be found and created in their individual setting (Peppard, 2016).

3. Digital Strategy- a Success Driver for *Digitalization*

Research has provided evidence that shows that organizations are already aware of and act to become more engaged in digital initiatives (Kane et al., 2015). However, most CEOs are disappointed with an unsatisfactory return achieved on their IT expenditure (Peppard & Ward, 2016; Tiernan & Peppard, 2004) and often still lag behind digital reality (Hess et al., 2016).

Acknowledging that reasons for failure to transform can involve limited financial resources and organizational commitment (Kane et al., 2015; Westerman et al., 2011) most scholars agree that identified pitfalls relate to the fact that companies do not have a digital strategy at all, or struggle to get it right (Catlin et al., 2015). Kane et al. (2015) show in their research that a digital strategy is the key factor that differentiates digitally mature from digital immature companies. Due to the speed of innovation and the breadth of possible opportunities, setting the right focus in a timely way becomes a major challenge for organizations. Therefore, making correct decisions as to the future direction of an organization is crucial to its success. Thus, a concrete plan to transform to digital is essential (Lamoureux, 2017).

Before looking at how to actively approach a digital strategy, we first need to fully comprehend this concept.

3.1 Transferring Theories: The Concept of Digital Strategy in Literature

The concept of digital strategy is relatively new to academic literature and thus findings are fragmented to date. Scholars do provide working definitions, however, there is still friction between them (Hess et al., 2016). In particular, the organizational set-up and the correlation between digital, business and IT strategy make up for most discrepancies (Bharadwaj et al., 2013; D'Cruz et al., 2015; Rauscher, 2016; Spil, Kijl, & Salmela, 2016). Whereas business

strategy is defined as dealing with “where” the business is going and thus, providing direction to the organization as a whole (Bharadwaj et al., 2013), IS/ IT strategies act as functional strategies. They determine “what” is required to reach business objectives and “how” they can be delivered through the application of technology (Peppard & Ward, 2016). As a result, it is clear that IT strategy should be subordinate to business strategy (Bharadwaj et al., 2013).

In order to establish a clarifying lens through which to examine how digital strategy is conceptualized, this thesis paper analyzes and synthesizes four different streams of research.

3.1.1 Digital Strategy as a Strategy for Digital Transformation

Some scholars perceive a digital strategy as a strategy particularly for digital transformation.

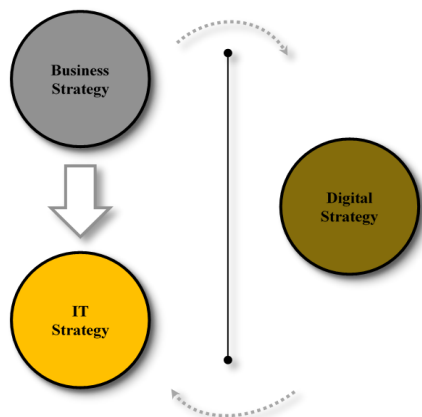


Figure 3: Digital Strategy as a Transformation Strategy (own conception)

Academia pinpoints that digital transformation demands an individual strategy that is standalone and not part of another organizational or functional strategy due to its strategic importance (Hess et al., 2016; Singh & Hess, 2017) (Figure 3). Rauscher (2016) builds on this view that digital strategy is solely concerned with organizations’ digital initiatives, however does not

state whether he recognizes it as a standalone or an integrated strategy. Catlin et al. (2015) however, stress the significance of the digital strategy being highly aligned with the business strategy. Nevertheless, in both cases the *digitalization* endeavor is treated organizationally separately from core business.

A pertinent example is Mittelbayerische AG, a German publishing group, which defined a digital strategy to focus on moving from print to digital. The strategy was however set up alongside their normal business strategy. The core business of this company was still to be a leader in print media (Hess et al., 2016). Digital technologies, such as mobile, drove the company to come up with a new business direction. Nonetheless, they did not integrate their

new vision with their core business, continuing to allow the digital strategy to guide a standalone *digitalization* initiative.

3.1.2 Digital Strategy as Functional Strategy

Some scholars argue that a digital strategy should be formulated and implemented as a functional strategy more precisely as a part of a firm's IT strategy (S Mithas & Lucas, 2010; Peppard, 2016)(Figure 4).

Peppard & Ward (2016) claim that digital strategy is equal to IT strategy and must be closely aligned with a company's business strategy. In this sense, equal means on the same organizational level, stressing that digital strategy and technology strategy are two different things, being interrelated but not the same (Peppard & Ward, 2016). Here, business strategy still defines where the

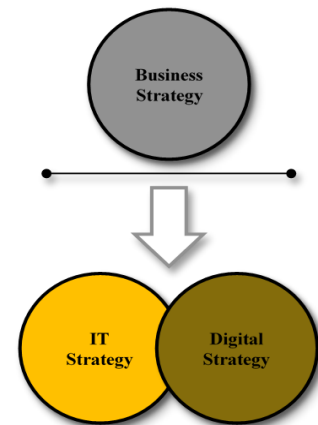


Figure 4: Digital Strategy as a part of IT Strategy (own conception)

business is going and digital strategy as a functional strategy is formulated to adhere to those objectives. Thus, digital technologies are simply perceived as a means to achieve business goals and not as a transformative force (Peppard & Ward, 2016). “The success of the IT effort depends on communicating the firm's business strategy and enlisting managers at all levels in making decisions about technology individually for their functional areas” (S Mithas & Lucas, 2010, p. 4). The outlook of some of those papers though, frequently gives indication for this proposition to change in direction to Figure 5 due to the rising strategic importance of IT (Sunil Mithas, Tafti, & Mitchell, 2013).

In the example of Mittelbayerische AG, the business strategy would still entail being the leader in print media, implying a clear goal that serves as the guiding principal for the firm's functional strategies. The IT department formulates a digital strategy to invest in new analytic systems that enable them to analyze information better and thus, are able to offer their customers new and relevant information. With this example, it can clearly be seen that digital

technologies become a driver for the functional, IT strategy in order to fulfill the business objective. The business goal itself is not transformed by the influence of digital opportunities.

3.1.3 Digital Strategy as Business Strategy

Roger (2016) clearly emphasizes that it is the business strategy that is to be transformed due to the implications of digital, stressing that technology must become the means to reinvent the core business itself (Rogers, 2016). “If electrification was transformative because it changed the fundamental of constraints of manufacturing, then the impact of digital is even bigger because it changes the constraints under which practically every domain of business strategy operates” (Rogers, 2016, p. 4). This transformative potential can however only be freed, if it is made strategically relevant (Lamoureux, 2017). While executives every so often ask what the return from their investments

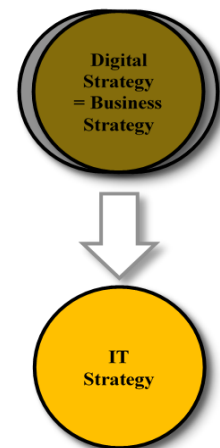


Figure 5: Digital Strategy as Business Strategy (own conception)

in technology is, a healthier attitude might be to investigate how to utilize technology as a strategic asset to enable new competencies or a competitive advantage (McDonald, 2012). Thus, McDonald (2012) states that digital strategy must be equal to business strategy which then gives a clear indication of the implications arising for IT (Figure 5).

Extending this analysis to the publishing example would mean that Mittelbayerische AG would be able to see the benefits of digital technologies in combination with their given assets and formulate a digital strategy to become the leader of online publishing with the highest market share. In this way, the digital strategy becomes equal to business strategy, as it describes the objective for transforming the business model of the whole organization. A clear direction is then established for IT, so that it can provide the operational backbone to adhere to the digital business objective. In this case, it can mean setting up an online publishing platform, enabling functional departments to access this, and publishing from this platform.

3.1.4 Outlook: Digital Strategy as Business Strategy and IT Strategy fused

Bharadwaj et al. (2013) stress that in the future, digital strategy will be a fusion of IT and



Figure 6: Digital Strategy as Business and IT Strategy fused

business strategy (Figure 6). This perception results from the argument that organizations now act and react in a digital world where one and the other have to become inseparable. As of now, the business landscape has developed to become increasingly

digital, with interconnections between products, processes, services and functions; barriers between business and technology blur (Bharadwaj et al., 2013; Peppard & Ward, 2016) and so will business and IT strategy.

3.2 A Digital Strategy must be Context-driven

Described findings show that there is no clear and unambiguous definition or description of what a digital strategy actually is in literature. How is this possible?

Reeves et al., (2015, n.a) identify that digital is “stretching businesses across a wider set of conditions – and that this requires different approaches to strategy in different businesses”. Digital strategy is therefore, not a matter of one size fits all (Khare et al., 2016; Peppard & Ward, 2016; Vermeulen, 2017). Vermeulen (2017; p. n.a) agrees and states: “Digital technology is affecting and will affect different businesses in different ways. Miss these nuances and your strategic decisions could lead you seriously astray”.

In analyzing the available research, despite high divergence of views regarding the nature and organizational set-up of digital strategies, there is one thing that all demonstrated propositions have in common (Figure 3-6): they determine to guide the use of digital technologies to generate value in an organization; thereby defining but distinguishing how and for what digital technologies will be used (Bharadwaj et al., 2013; Lamoureux, 2017) (Appendix B2). Conclusively, digital strategy can be summarized as: “organizational strategy formulated and executed by leveraging digital resources to create (differential) value”

(Bharadwaj et al., 2013, p. 472) However, how can companies know which strategic setting is the best fit for their individual endeavor and circumstances? (Figure 7)

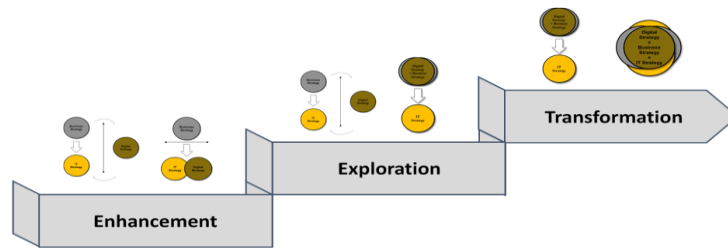


Figure 7: Contextual Digital Strategy (own conception)

The strategic set-up of figure 4 was often found in cases when an organization was still digitally immature and hence needed to focus on building an operational backbone and internal capabilities in order to be able to move forward with digital innovation (Cruz et al., 2015; Kane et al., 2015; Westerman et al., 2011). In those cases, the objective of digital strategy was process or product **enhancement** (Gerbert et al., 2015). In contrast, the strategic set-up of figure 5 was found mostly in digitally mature companies, whose strategic intent was primarily focussed on product and service effectiveness (**exploration**) or business model **transformation**. In order to achieve this outcome, an organizations' overall buy-in is required (Cruz et al., 2015; Kane et al., 2015; Westerman et al., 2011). The digital strategy of figure 3 was seen as beneficial when organizations wanted to ensure that internal organizational barriers such as daily business, cultural resistance or operational tardiness did not hinder their *digitalization* program (O'Reilly & Tushman, 2004). Due to the fact that the digital strategy is managed and organized separately, it mostly focuses on **enhancement** or **exploration** initiatives (Bharadwaj et al., 2013; Reeves et al., 2015; Vermeulen, 2017).

In summary, it can be said that there are different definitions of digital strategy that exist in research literature. None of them is right or wrong per se. It is the responsibility of companies to understand their individual circumstances and define their *digitalization* endeavor in order to identify which proposition is right for them (now and in the future) (Reeves, Love, & Tillmanns, 2012; Wolf & Floyd, 2013). Small and traditional companies in particular are reported to flounder in developing and implementing a digital strategy, reporting high failure

rates and limited success stories (Westerman et al., 2011). It is critical to investigate the challenges to organizations as they struggle with the process of developing a digital strategy.

4. Methodology

A rationale for the case study as the empirical method of choice, the design of the interview manual and the approach used to gather evidence are systematically described in this chapter.

4.1 Research Strategy

Research to date has provided very limited and fragmented advice on how to approach and develop the concept of digital strategy. Thus, it is difficult to understand how and why companies, in particular traditional ones, struggle. To achieve a better understanding of the challenges these companies face, I conducted an exploratory single case study (Yin, 1981; 2009). The case study method is applied as it can be used to give descriptions and test or create theory (Yin, 1981), and hence is appropriate for this qualitative research case.

4.2 Research Setting and Case Selection

For this study, a traditional German mid-sized manufacturing business of manhole covers (see Appendix C1-C3 for detailed information on the company) was selected for two reasons. Firstly, research has provided insight that longstanding manufacturing industries are somewhat slow to take advantage of *digitalization*, lagging far behind other industries such as telecommunications, music and banking (Kane et al., 2015).

Secondly, scholars have indicated that traditional mid-sized companies do not show evidence of any significant success in regard to digital strategy, particularly struggling to develop the right strategy (Gerbert et al., 2015; Kane et al., 2015; G Westerman et al., 2011). The target company fits both criteria. Besides, due to the given industry pressure, the company reported starting to engage in digital thereby providing an ideal case for investigation.

4.3 Data Collection

I conducted semi-structured interviews with the CEO and one leading Product Manager of the

company. While this sample size may sound small, it is important to note that early observations revealed a strict hierarchical company structure in which the CEO was the only person empowered to make strategic decisions. This hierarchical structure is typical in traditional family organizations (Eser, Demirbağ, & Yozgat, 2012; Jaffe, 2005; Upton, Teal, & Felan, 2001). In the context of this thesis, in which the digital strategy development process is the topic to be observed, a single person who holds all decision making power is considered a reliable sample size, covering as it does the entire sample for the construct to be observed. Nonetheless, another interview was conducted with a leading Product Manager, who was considered a representative of all employees, in order to test the CEO's perceptions.

The advantage of interviews is that they allow events to be reconstructed. Moreover, the benefit of semi-structured interviews is that they are flexible and allow topics of particular interest to be pursued (Bryman, 2008). Both interviews took around 90 minutes and were structured the following way: (see Appendix A1). The interview manual is organized in five main parts: (1) General Information (2) Questions on Digital Comprehensiveness (3) Digital Strategy Development (4) Digital Potential Analysis (Appendix A1).

4.4 Data Analysis

In order to analyze the data, the interviews were audio taped and a qualitative content analysis was used. Afterwards text sections were coded, categorized and mapped against described literature findings (Appleton, 1995; Bryman, 2001; Turner, 2010).

4.5 Reliability and Validity

To decrease potential informant bias two persons from the company were interviewed. The interview was structured systematically and questions formulated which were general and open-ended to enable interviewees to reproduce their own version of the strategy development process without being influenced by response bias. In order to make sure I understood the perceptions of the interviewees correctly, I ended each main interview theme with an

assessment of the described concept through the Likert Scale from 1-10. Moreover, the mirroring technique was used when I felt any doubt that I had not understood the essence of the respondent's answer and the technique of repetitive questions if the context was critical (Appleton, 1995; Golafshani, 2003). When having assessed the *digitalization* potential for the case company, I formulated very concrete questions to clearly guide the interviewees to the construct of interest and to ensure answers were comparable. However, in order not to influence the interviewees by a potential changed view of their digital strategy development process, the *digitalization* potential analysis was executed at the very end as the final part of the interview.

5. Findings

The following section will provide insight into how a traditional organization approaches the topic of digital strategy, what they struggled with and the underlying reasons for this struggle.

5.1 Evidence on Understanding the Importance and Potential of *Digitalization*

After having first assessed company specific background information, I focused on gaining insight into how the respective interviewees understood the concept of *digitalization* and its general implications for their company (see Appendix A1, Q1-Q6; Q16-Q24).

To the first question “what does *digitalization* mean” the answers of the two interviewees varied. Whereas the CEO stated *digitalization* to be: “achieving most possible efficiency and transparency through digitization” the employee presented it as a “novel way of doing business owed to digital technologies”. His concrete examples, such as online order management and online payment processes, were t also grounded in digitization. Despite the slightly deviating definitions, both interviewees agreed that *digitalization* was highly important to their organization, which is verified by a score of 9 out of 10 on the Likert Scale. This high mark results from the similar reasons provided by both subjects. Both the CEO and the young colleague state that technologies such as online services have aided their business by making

processes more efficient and transparent. The younger colleague also pointed to digital technologies enabling their business to operate more cost-effectively. To the question of whether the company was looking at other digital opportunities apart from process efficiency e.g. digital products, the CEO as well as the young colleague clearly answered “no”. This response is explained by the fact that neither of the subjects see their current industry being significantly impacted at this stage by new technologies and their customers are not expressing a desire for new developments. Both subjects stressed that it was mostly internal processes that they saw being affected and therefore, believed that they had transformed almost all their digital potential successfully (Figure 8). Nonetheless, at the end of the interview, assessing the *digitalization* potential of their business with them (see Appendix A1; Q7 – Q15), both the CEO and employee revised their initial assessment and stated that they now saw further potential for digital opportunities that could grow their business (Figure 8). Technologies such as cloud services particularly sparked their interest.

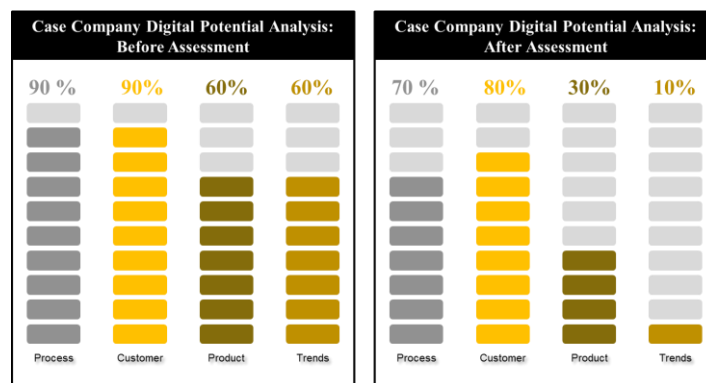


Figure 8: Assessment of digital potential realized by Case Company (own conception)
(as 100% is maximum potential realized, 0% no potential realized)

To conclude, findings show that both the CEO and Product Manager had a limited view about what *digitalization* actually means in comparison to the definition that is given in literature. The subjects’ descriptions refer to digitization, however not to the strategic aspects in which those digitized results can produce differential value. This view is backed up by the subjects’ pre and after digital potential assessment, which underlines that both interviewees did not see many of the strategic digital opportunities. This leads to the conclusion that the case company

does not use its full digital potential due to limited understanding of the possibilities it offers.

5.2 Evidence on Digital Strategy Approach

The second part of the designed interview focused on the process of development of digital strategy at the case company. My intention was to understand how the case company approached the development of digital strategy, what their digital strategy looks like and how they implemented it within the organization (see Appendix A1; Q7 – Q15).

5.2.1 Development of a Digital Strategy

The CEO explained that their progress to digital was highly evolutionary. The company started to execute first digital changes due to customer feedback and their expectations. This is reflected in research (see 2.3), as customers are one of the main motivators for companies to engage in digital initiatives. For the case company, it was business partners demanding the digitization of their product offering. Secondly, the order management started to change from analog to a digital process, which was followed by an online construction tool for product development, a website and an online payment system. “In the beginning, there was no strategy for digital” claimed the CEO. First efforts were managed as stand-alone initiatives with the highest priority and only later were the initiatives integrated into the overall business. However, as digitization became an ongoing process, the CEO formulated a digital strategy as “process and operations efficiency in order to serve their customers’ demands”. The development process was described as very simple; the CEO stated: “it was simply describing what we have already been doing. I just made it clear to everyone in each department to guide their work in regards to what I want to have achieved”. Most interestingly, the employee was not aware of the company having a digital strategy. He emphasized that each functional department managed digital opportunities by themselves, which were geared to the overall business strategy.

These findings align with two strategic perceptions that were highlighted in chapter 3. Similarly to research described the digital initiatives were first treated separately, as they were

of strategic importance and required full time focus and aspiration. Evidence clearly shows that in this case study digital strategy was unconsciously managed in the first instance as a stand-alone strategy. In this case, as Catlin et al. (2015) propositioned, digital initiatives were aligned with the company's business strategy. As a second step, the company integrated its digital initiatives and formulated a digital strategy as a functional approach, as for them technology served as a means to achieve business goals (customer satisfaction through enhanced services). Seemingly, the case company has positioned its strategic intent well in its organizational structure to achieve desired digital outcomes. However, it was significant that the CEO believed the company has a clear digital strategy, whereas the Product Manager was not aware of such a strategy. Hence, the strategy is assumed to be communicated only incidentally rather than proactively, as the employee was not consciously aware of it.

5.2.2 Challenges occurred during Strategy Development

The CEO acknowledged in retrospect that they should have realized sooner that change was needed i.e. that customers would demand digital services. As a result, she has put many of her employees in a highly stressful situation of having to learn and adapt to new systems in a very short timeframe with insufficient capability. The missing capabilities were initially costly for the company resulting in some failures. The lapse in time is due to the company not having asked for direct feedback on customer satisfaction thereby missing the opportunity to be made aware to the change in demand in a timely way. Furthermore, as a result of the strictly hierarchical structure in the company, with the CEO being the only person responsible for making strategic relevant decisions and implementing changes, her employees usually do not approach her with new innovative ideas or propositions for change. The Product Manager also backed up this view. He stated that the CEO is the only one who sparks innovative projects. He does not see this as critical however; as he believes, his company is at a highly digitally mature stage with no further need to improve. The CEO describes herself as not

knowledgeable in the field of digital. This means that unless her customers point out exactly what needs to be changed, the company most likely will not anticipate changing customer needs. She understands the actual potential of being disrupted as apparent, due to a lack of competitive and industry analysis, but feels it would take extreme effort to change the company's culture to be more task oriented and proactive. Moreover, she pointed out that new digital ideas usually involve high investment costs and no direct benefit to their existing customers. In presenting this view, she is showing herself to be risk averse, an attitude grounded in the fact that the case company is facing liquidity issues with barely sufficient cash flow to keep the business operating. Thus, the company cannot risk a deceitful move away from traditional operating models, as this could potentially cost their existence.

Findings show that the development process of the digital strategy was difficult at the beginning because there was no on-going or thorough analysis of their business environment. Consequently, they were surprised by fast-paced industry changes. Furthermore, the company lacked certain IT capabilities that led to failures and attributed costs. The case company was able to cope with those difficulties; however, the CEO emphasized that the lack of a thorough analysis of external threats may cause further surprises in the future. Moreover, the organizational culture, the lack of technical knowledge to judge opportunities adequately and the high risk involved with innovative opportunities around digital technologies hinders the company even more. These three factors seem to play a significant role in why the case company was not able to achieve its digital potential and realize significant value around digital opportunities. They have simply adapted, but not innovated.

5.3 Summary

The case study provided extensive insight into elementary factors in the digital strategy development process and the challenges traditional companies face keeping them from achieving success in regard to digital opportunities. There were three main findings:

(1) The case company was not able to realize its full digital potential, which was caused by (a) a lack of understanding of what *digitalization* and digital technologies are. This limited their awareness for digital opportunities to the extent that they believed they had almost full digital potential despite not realizing any value from their past opportunities. This is reinforced by the (b) organizational fit of their digital strategy. The strategy is formulated as a functional strategy. While this was the correct move at first to build an operational backbone and grow capabilities, the CEO then needed to encourage digital technologies as a means of stimulating exploration of new markets or products.

(2) The case company struggled with the strategy execution at first, which was caused by a lack of thorough development and preparation phase.

(3) Digital Strategy planning is also significantly affected by factors such as hierarchical structure, organizational culture and a company's internal competencies and assets. Ongoing liquidity problems caused the organization to plan conservatively rather than opt for more high-risk ventures that might turn out as glorious success stories. Furthermore, the CEO operating in isolation will not be able to see all digital strategic opportunities and thus, hierarchical structure and an organizational power culture are hindering opportunities for *digitalization* maturity².

6. Conclusion

To conclude this thesis, a conceptual framework for digital strategy development is proposed that takes into account literature findings and the learnings from the case study. Furthermore, this paper is not without limitations. Hence, these will be noted and possible points for improvement identified. Finally, a recommendation is made for further research arising from the observations in this thesis paper.

² Digitalization maturity is realizing full digital potential (Westerman et al., 2012)

6.1 Conceptual Framework for the Development of a Contextual Digital Strategy

Although there is no recipe for how to develop a digital strategy, there are several factors that can help companies, particularly traditional organizations, to approach the topic of digital strategy (Catlin et al., 2015; Gerbert et al., 2015; Reeves et al., 2015; Vermeulen, 2017; Westerman et al., 2011). Based on the theory described above and the findings from the exploratory case, I developed a framework that advises companies, especially those that are traditionally small and medium sized, about how to approach the development of a digital strategy in order to help overcome challenges and grow the chance to realize differential value.

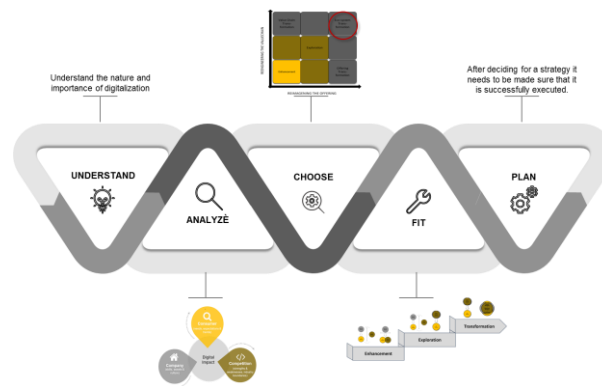


Figure 9: Approach to Digital Strategy (own conception)

In the first instance, to *understand*, *analyze* and *choose* can be understood as defining where I want to play in the digital arena of possibilities. The second step, *fit* and *plan* account for how to win where I play (Catlin et al., 2015; Gerbert et al., 2015; Reeves et al., 2015). Lastly, alongside with the strategy development process, companies must also be aware of their hierarchical structure and company culture that can either be favoring or hindering the process.

Understand the vernacular

Organizations need to understand the vernacular of digital. In fact, if the top management team is asked what *digitalization* means and digital technologies are, they should be able to provide a well founded answer. Moreover, top management needs to be aware of certain trends and have an idea of technological advancements in order to promote this topic and its importance

within their company. It is also vital that executives are aware that *digitalization* is not solely about transformation, but can also begin with smaller initiatives (Gerbert et al., 2015; Lamoureux, 2017; Reeves et al., 2015) though this should ideally lead to a more ambitious plan.

Analyze your Context

As described in chapter 3.2, the key to developing a sound digital strategy is to manage contextual variables. A good strategy depends on an understanding of external factors e.g. industry dynamics and forecasted trends (Kane et al., 2015; G Westerman et al., 2011) as well as motivational factors and a company's capabilities in regard to digital. A company should ask whether new digital technologies (often referred to as trends in online articles), for example artificial intelligence, will influence its industry (see chapter 2.1 Digital technologies). Motivational factors are both external and internal, such as competitors, customers or employees who drive organizations towards digital (see chapter 2.3 Reasons to transform digital) (Kappelman, Mclean, & Gerhart, 2014). For instance, a company should inquire whether its competitors are engaging in any digital initiatives. What do my customers want? Is there any unmet demand? Do I have the capabilities to exploit available opportunities? These drivers need to be correctly addressed by each firm in order to plan well and avoid missing out or investing in the wrong initiative. This exercise is like mapping the landscape around each firm, their individual position and the factors that influence the status quo. Additionally, executives need to think beyond the now. Literature suggests four questions that need to be answered as part of an in-depth analysis: "Where can I see and create value now?" "What can I forecast?"; "Where can I be disrupted?" and "What can I shape and where do I need to adjust?" (Gerbert et al., 2015, p. 2). Ultimately, it is organizations focusing on a thorough analysis in order to see their threats and opportunities lined out in front of them.

Decide for a Digital Strategic Intent

It is of utmost importance to not only analyze opportunities but to also "frame, explore and

prioritize” them (Gerbert et al., 2015; p.2). “You know you need to place a bet but you don’t know where to put your chips” (Dahlström et al., 2015, p. 1). Therefore, it is advised that companies consider given risks and returns of mapped opportunities and choose the strategy that they believe best fits their environment and the people at their company. Literature as well as the case interview also stresses the importance of having both a short-term and long-term perspective (Gerbert et al., 2015). Ultimately, companies will not be able to do everything that is possible right away; hence, strategy is about making conscious judgements and choices (Gerbert et al., 2015; Reeves, 2015; Rumelt, 2015). Catlin et al. (2015) has stressed that: “not by “doing digital” on the margin of their established businesses but by wholeheartedly committing themselves to a clear strategy” is the way value is created.

Fit your Strategic Intent to your Digital Strategy

As outlined in chapter 3.1, there are different forms of digital strategy described in literature. However, we assume that different strategic intents demand a specific organizational fit in order to achieve the desired objective. Depending on the decision that is made on “where to play”, companies need to make sure that their strategic intent is appropriately positioned in the organization’s structure. If companies opt to transform their business model it is not enough to formulate a functional digital strategy, as clearly, transformation will influence the whole organization. Conversely, if firms are still digitally immature and start by building their operational backbone first, it makes sense to formulate a digital strategy as standalone or as a functional IT strategy, at least initially (as seen in the case organization). With “fit” we stress that organizations need to be aware of their goals about “where they want to go”, their strategy and its implications for the organization so that the right conditions are in place to move forward (Bharadwaj et al., 2013; Catlin et al., 2015; Lamoureux, 2017; Peppard & Ward, 2016).

Plan ahead for Execution

This thesis paper has focused on how to approach and develop a digital strategy. In order to

be successful though, each strategy also needs to be executed well. Hence, a thorough plan needs to be developed to get buy-in from executives and employees at all levels (Brown et al., 2013). Furthermore, described process is not static, it is dynamic (Khare et al., 2016). Thus, companies need to make sure to continuously reevaluate their assessment

Be aware of Soft Factor Influence

Lastly, and as seen as crucial in the exploratory case, soft factors such as culture and hierarchy played an elementary part for *digitalization* maturity. Thus, if companies are set-up very hierarchical or with strong power cultures, executives must make sure that the topic of digital is actively communicated as a priority within an organization and headcount and time is assigned proactively for the digital strategy planning and development (Kane et al., 2015).

6.2 Limitations

The interview manual contained some limitations, as some questions left room for interpretation. This can be attributed to the fact that the construction was not undertaken in the creator's mother tongue language. A pre-test would have been advisable in order to assure the validity and quality of data and to point out potential trouble spots. Further limitations were that some questions did not add value and others were missed, which reduced the impact of the evidence. In the "Potential Analysis" the interviewer explained curtailed concepts, which could cause informant bias. Lastly, reliability is limited because the qualitative data analysis was not repeated by a second person. Likewise, the target group was restricted to only one company. A multiple case study would possibly have provided more powerful evidence.

6.3 Implications for Research and Practice

In conclusion, it is noted that this thesis paper is only the first step in the process. It is analysis and recommendations based on primary evidence. It would be advisable to repeat this research with a larger sample size. Sample size refers to the number of organizations (not the number of interviewed people in an organization). Furthermore, it is thought provoking to test differences

between traditional companies in different industries and differences between traditional and corporate companies to see if challenges are differentiated. This would be helpful in order to understand if challenges are industry-specific or construct-specific. Moreover, it is recommended that researchers could test how strongly identified challenges of traditional companies influence the potential *digitalization* outcome. Lastly, the advised framework needs to be put into practice and tested qualitatively for improvement and quantitatively for success.

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Affidavit

I hereby affirm that this submitted paper entitled “DIGITAL BUSINESS STRATEGY – THE TYPICAL CASE OF A GERMAN MANUFACTURING SME” was authored unaided and solely by me. Additionally, no other sources than those in the reference list were used.

This paper either in parts or in its entirety be it in the same or similar form, has not been submitted to any other examination board and has not been published.

The data analyzed in this paper have not been made up or falsified. They have been collected independently and as indicated or they have been provided by reliable and indicated sources for this new- or reanalysis.

Lisbon, 26.05.2017